AMENDMENT

Amendments to the Claims: Please replace all prior versions and listings of claims with the following listing of claims.

LISTING OF CLAIMS:

1-30. (**Cancelled**)

31. (**Currently Amended**) A method of providing service analysis in service level management, comprising:

providing a service over a network having a plurality of network components that support the service, wherein performance of the service depends upon performances of the plurality of network components that support the service, and wherein the service has a state that represents the performance of the service;

measuring a plurality of component parameters for the plurality of network components that support the service across a plurality of domains of the network, wherein the plurality of component parameters measure performances of the plurality of network components that support the service;

determining the state of the service from the plurality of ~~measured~~ component parameters measured across the plurality of domains of the network, wherein determining the state of the service includes mapping the plurality of ~~measured~~ component parameters measured across the plurality of domains of the network to a service parameter that represents the state of the service, and wherein the state of the service indicates whether the service conforms to an agreed upon service level identified in a service level agreement; ~~and~~

executing one or more data mining algorithms ~~that~~ to discover a respective ~~influences~~ influence that a first one ~~each~~ of the ~~plurality of~~ measured component parameters in a first domain of the plurality of domains of the network has ~~have~~ on the service parameter~~, wherein the respective influences represent relationships between the state of the service and the plurality of network components that support the service~~;

executing the one or more data mining algorithms to discover a respective influence that a second one of the measured component parameters in a second domain of the plurality of domains of the network has on the service parameter;

identifying one of the first component parameter or the second component parameter that has a greatest influence on the service parameter based on the respective influences that the first component parameter and the second component parameter have on the service parameter; and

designating the identified component parameter to be the service parameter.

32-33. (**Cancelled**)

34. (**Previously Presented**) The method of claim 31, wherein the service parameter represents one or more of a response time for one or more of the plurality of network components, traffic congestion in a selected portion of the network, availability for one or more of the plurality of network components, reliability for one or more of the plurality of network components, security for one or more of the plurality of network components, performance for one or more of the plurality of network components, or a configuration for one or more of the plurality of network components.

35. (**Previously Presented**) The method of claim 31, wherein a plurality of monitoring agents are configured to measure the plurality of component parameters for the plurality of network components that support the service.

36. (**Currently Amended**) The method of claim 35, wherein each of the plurality of monitoring agents are configured to measure a subset of the plurality of component parameters in a respective domain of [[a]] the plurality of domains of the network.

37. (**Currently Amended**) The method of claim 31, further comprising integrating the plurality of domains into a service level management domain that comprises a [[a]] hierarchical structure for the plurality of domains.

38. (**Cancelled**)

39. (**Currently Amended**) The method of claim 31, wherein designating the identified component parameter to be the service parameter includes ~~further comprising:~~

designating the [[a]] first ~~one of the plurality of~~ component parameter ~~parameters~~ to be the service parameter[[;]]

~~analyzing~~ in response to determining that the respective ~~influences~~ influence that ~~each of~~ the first ~~plurality of measured~~ component parameter has ~~parameters have~~ on the service parameter is greater than ~~to manage the service; and~~

~~designating a second one of the plurality of component parameters to be the service parameter in response to analyzing~~ the respective ~~influences~~ influence that the second ~~plurality of measured~~ component ~~parameters have~~ parameter has on the service parameter.

40. (**Cancelled**)

41. (**Currently Amended**) The method of claim [[39]] 31, wherein designating the identified ~~second~~ component parameter ~~is designated~~ to be the service parameter includes designating the second component parameter to be the service parameter in response to determining that the respective influence that the second component parameter has on the service parameter is greater than the respective influence that the first component parameter has on the service parameter.

42-45. (**Cancelled**)

46. (**Currently Amended**) A device readable medium holding device executable instructions for executing a method of providing service analysis in service level management, the method comprising:

providing a service over a network having a plurality of network components that support the service, wherein performance of the service depends upon performances of the plurality of network components that support the service, and wherein the service has a state that represents the performance of the service;

measuring a plurality of component parameters for the plurality of network components that support the service across a plurality of domains of the network, wherein the plurality of component parameters measure performances of the plurality of network components that support the service;

determining the state of the service from the plurality of ~~measured~~ component parameters measured across the plurality of domains of the network, wherein determining the state of the service includes mapping the plurality of ~~measured~~ component parameters measured across the plurality of domains of the network to a service parameter that represents the state of the service, and wherein the state of the service indicates whether the service conforms to an agreed upon service level identified in a service level agreement; ~~and~~

executing one or more data mining algorithms ~~that~~ to discover a respective ~~influences~~ influence that a first one ~~each~~ of the ~~plurality of~~ measured component parameters in a first domain of the plurality of domains of the network has ~~have~~ on the service parameter~~, wherein the respective influences represent relationships between the state of the service and the plurality of network components that support the service~~;

executing the one or more data mining algorithms to discover a respective influence that a second one of the measured component parameters in a second domain of the plurality of domains of the network has on the service parameter;

identifying one of the first component parameter or the second component parameter that has a greatest influence on the service parameter based on the respective influences that the first component parameter and the second component parameter have on the service parameter; and

designating the identified component parameter to be the service parameter.

47-48. **(Cancelled)**

49. **(Previously Presented)** The medium of claim 46, wherein the service parameter represents one or more of a response time for one or more of the plurality of network components, traffic congestion in a selected portion of the network, availability for one or more of the plurality of network components, reliability for one or more of the plurality of network components, security for one or more of the plurality of network components, performance for one or more of the plurality of network components, or a configuration for one or more of the plurality of network components.

50. **(Previously Presented)** The medium of claim 46, wherein a plurality of monitoring agents are configured to measure the plurality of component parameters for the plurality of network components that support the service.

51. **(Currently Amended)** The medium of claim 50, wherein the method further comprises the plurality of monitoring agents are configured to measure a subset of the plurality of component parameters in a respective domain of [[a]] the plurality of domains of the network.

52. **(Currently Amended)** The medium of claim 46, wherein the method further comprises integrating the plurality of domains into a service level management domain that comprises a [[a]] hierarchical structure for the plurality of domains.

53. **(Currently Amended)** The medium of claim 46, wherein[[,]] designating the ~~method~~ identified component parameter to be the service parameter includes ~~further comprises:~~

designating the [[a]] first ~~one of the plurality of~~ component parameter ~~parameters~~ to be the service parameter[[;]]

~~analyzing~~ in response to determining that the respective ~~influences~~ influence that ~~each of~~ the first ~~plurality of measured~~ component parameter has ~~parameters have~~ on the service parameter is greater than ~~to manage the service; and~~

~~designating a second one of the plurality of component parameters to be the service parameter in response to analyzing~~ the respective ~~influences~~ influence that the second ~~plurality of measured~~ component ~~parameters have~~ parameter has on the service parameter.

54. (**Cancelled**)

55. (**Currently Amended**) The medium of claim [[53]] 46, wherein designating the identified ~~second~~ component parameter ~~is designated~~ to be the service parameter includes designating the second component parameter to be the service parameter in response to determining that the respective influence that the second component parameter has on the service parameter is greater than the respective influence that the first component parameter has on the service parameter.

56-58. (**Cancelled**)

59. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms are executed while the plurality of network components are operating to support the service.

60. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms include a neural network algorithm that comprises:

identifying a case library that includes a plurality of cases representing episodes of problem solving;

applying a plurality of relevance rules to identify one or more of the cases in the case library that are relevant to discovering the respective influences for the plurality of measured component parameters; and

adapting one or more solutions variables associated with the identified cases using parameterized adaption logic to discover the respective influences that each of the plurality of measured component parameters have on the service parameter.

61. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms include a decision tree algorithm that comprises producing a decision tree that represents the respective influences that each of the plurality of measured component parameters have on the service parameter.

62. (**Previously Presented**) The method of claim 61, wherein the decision tree includes one or more of numeric values or binary values that represent the respective influences that each of the plurality of measured component parameters have on the service parameter.

63. (**Previously Presented**) The method of claim 61, wherein the decision tree includes a root node that represents the service parameter, a plurality of leaf nodes that respectively represent the plurality of component parameters, and a plurality of dependencies between the root node and the plurality of leaf nodes that represent the respective influences that each of the plurality of component parameters have on the service parameter.

64. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms include a top N algorithm that comprises:

identifying a predetermined number of the plurality of measured component parameters that have a greatest influence on the service parameter; and

producing a list that includes the identified component parameters having the greatest influence on the service parameter, wherein the identified component parameters are listed in a decreasing order of the respective influences that the identified component parameters have on the service parameter.

65. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms include a rule induction algorithm that comprises producing one or more rules that represent the respective influences that one or more of the plurality of measured component parameters have on the service parameter.

66. (**Previously Presented**) The method of claim 65, wherein the one or more rules include one or more of propositional statements or quantified statements that represent the respective influences that the one or more component parameters have on the service parameter.

67. (**Previously Presented**) The method of claim 36, wherein the one or more data mining algorithms include an inductive logic algorithm that comprises:

incorporating knowledge relating to the plurality of domains of the network and knowledge relating to the plurality of measured component parameters within a rule base;

inferring the respective influences that each of the plurality of measured component parameters have on the service parameter using the knowledge incorporated within the rule base; and

producing one or more of propositional statements or quantified statements that express the respective influences that one or more of the plurality of component parameters have on the service parameter.

68. (**Previously Presented**) The method of claim 31, wherein the one or more data mining algorithms include a fuzzy logic algorithm that comprises:

translating the plurality of measured component parameters into a plurality of respective fuzzy concepts;

determining grades of membership that the measured component parameters have in the respective fuzzy concepts, wherein the grades of membership quantify transitions between a plurality of states in a state transition graph; and

inferring the respective influences that each of the plurality of measured component parameters have on the service parameter from the grades of membership that the measured component parameters have in the respective fuzzy concepts.

69. (**Previously Presented**) The medium of claim 46, wherein the one or more data mining algorithms include a neural network algorithm that comprises:

identifying a case library that includes a plurality of cases representing episodes of problem solving;

applying a plurality of relevance rules to identify one or more of the cases in the case library that are relevant to discovering the respective influences for the plurality of measured component parameters; and

adapting one or more solutions variables associated with the identified cases using parameterized adaption logic to discover the respective influences that each of the plurality of measured component parameters have on the service parameter.

70. (**Previously Presented**) The medium of claim 46, wherein the one or more data mining algorithms include a decision tree algorithm that comprises producing a decision tree that represents the respective influences that each of the plurality of measured component parameters have on the service parameter.

71. (**Previously Presented**) The medium of claim 70, wherein the decision tree includes one or more of numeric values or binary values that represent the respective influences that each of the plurality of measured component parameters have on the service parameter.

72. (**Previously Presented**) The medium of claim 70, wherein the decision tree includes a root node that represents the service parameter, a plurality of leaf nodes that respectively represent the plurality of component parameters, and a plurality of dependencies between the root node and the plurality of leaf nodes that represent the respective influences that each of the plurality of component parameters have on the service parameter.

73. (**Previously Presented**) The medium of claim 46, wherein the one or more data mining algorithms include a top N algorithm that comprises:

identifying a predetermined number of the plurality of measured component parameters that have a greatest influence on the service parameter; and

producing a list that includes the identified component parameters having the greatest influence on the service parameter, wherein the identified component parameters are listed in a decreasing order of the respective influences that the identified component parameters have on the service parameter.

74. (**Previously Presented**) The medium of claim 46, wherein the one or more data mining algorithms include a rule induction algorithm that comprises producing one or more rules that represent the respective influences that one or more of the plurality of measured component parameters have on the service parameter.

75. (**Previously Presented**) The medium of claim 74, wherein the one or more rules include one or more of propositional statements or quantified statements that represent the respective influences that the one or more component parameters have on the service parameter.

76. (**Previously Presented**) The medium of claim 51, wherein the one or more data mining algorithms include an inductive logic algorithm that comprises:

incorporating knowledge relating to the plurality of domains of the network and knowledge relating to the plurality of measured component parameters within a rule base;

inferring the respective influences that each of the plurality of measured component parameters have on the service parameter using the knowledge incorporated within the rule base; and

producing one or more of propositional statements or quantified statements that express the respective influences that one or more of the plurality of component parameters have on the service parameter.

77. (**Previously Presented**) The medium of claim 46, wherein the one or more data mining algorithms include a fuzzy logic algorithm that comprises:

translating the plurality of measured component parameters into a plurality of respective fuzzy concepts;

determining grades of membership that the measured component parameters have in the respective fuzzy concepts, wherein the grades of membership quantify transitions between a plurality of states in a state transition graph; and

inferring the respective influences that each of the plurality of measured component parameters have on the service parameter from the grades of membership that the measured component parameters have in the respective fuzzy concepts.